

LISTING OF CLAIMS

1(amended). An electroless method for treating a substrate having an electrically conductive surface comprising:

contacting at least a portion of the surface with a medium comprising water, about 1 to about 15 weight percent of at least one silicate and having a basic pH and wherein said medium [is substantially free of chromates] has a temperature of greater than about 50C; and,

drying the substrate[,
rinsing the substrate,
drying the substrate].

2(amended). [An aqueous medium for use in an electroless process for treating a conductive surface comprising a combination comprising water, at least one water soluble silicate,] The method of Claim 1 wherein the medium further comprises colloidal silica, [at least one dopant] and wherein the medium [has a basic pH and] is substantially free of chromates and VOCs.

3(amended). An electroless method for treating a metallic or an electrically conductive surface comprising:

exposing at least a portion of the surface to a medium comprising a combination comprising water, colloidal silica, and at least one water soluble silicate wherein said medium has a basic pH,

drying the surface,
[rinsing the surface,
drying the surface]; and
contacting the treated surface with at least one composition that adheres to the treated surface.

4(amended). The method of Claim [1] 3 wherein the [medium comprises water, sodium silicate and] colloidal silica has a particle size of less than about 50 nanometers.

5(original). The method of Claim 1 wherein the surface comprises at least one member selected from the group consisting of copper, nickel, tin, iron, zinc, aluminum, magnesium, stainless steel and steel and alloys thereof.

6(amended). The method of Claim 1 [wherein] further comprising rinsing after said drying and said rinsing comprises contacting the surface with a second medium comprising a combination comprising water and at least one water soluble compound selected from the group consisting of carbonates, chlorides, fluorides, nitrates, zironates, titanates, sulphates, water soluble lithium compounds and silanes.

7(amended). The method of Claim 1 wherein the medium comprises at least one dopant selected from the group consisting of zinc, cobalt, molybdenum [and], nickel and aluminum.

8(amended). The method of Claim 1 wherein said [first] drying is conducted at a temperature of at least about 120C.

9(amended). The method of Claim [1 further comprising applying at least one coating upon the surface] 5 wherein said surface comprises zinc or zinc alloys.

10(amended). The [medium of Claim 2] method of Claim 7 wherein the medium comprises a combination comprising water, [colloidal silica,] greater than about 1 [wt.%] weight percent of sodium silicate and [further comprises] at least one dopant selected from the group consisting of cobalt, nickel[,] and molybdenum [and zinc].

11(amended). The method of Claim 1 [further comprising forming a layer comprising silica upon the surface] wherein the surface comprises a chromated surface.

12(amended). The [medium] method of Claim 3 wherein [said dopant comprises at least one member selected from the group consisting of from the group of titanium chloride, tin chloride, zirconium acetate, zirconium oxychloride, calcium fluoride, tin fluoride, titanium fluoride, zirconium fluoride; ammonium fluorosilicate, aluminum nitrate; magnesium sulphate, sodium sulphate, zinc sulphate, copper sulphate; lithium acetate, lithium bicarbonate, lithium citrate, lithium metaborate, lithium vanadate and lithium tungstate] said medium further comprises at least one water dispersible polymer.

13(amended). The method of Claim 1 wherein said [medium comprises sodium silicate, water, colloidal silica and at least one dopant, said rinsing is conducted with a second medium comprising water and at least one member selected from the group consisting of silanes and colloidal silica and further comprising applying at least one secondary coating comprising at least one member selected from the group consisting of acrylics, urethanes, polyester and epoxies] method further comprises contacting with at least one acid.

14(amended). The method of Claim [1] 9 wherein said [rinsing comprising contacting said surface with a solution comprising water and at least one dopant] surface comprises zinc nickel alloys.

15(amended). The method of Claim 1[4] wherein [the dopant comprises at least one member selected from the group consisting of molybdenum, chromium, titanium, zircon, vanadium, phosphorus, aluminum, iron, boron, bismuth, gallium, tellurium, germanium, antimony, niobium, magnesium, manganese, zinc, aluminum, cobalt, nickel and their oxides and salts] the pH of the medium ranges from about 10 to about 12.

16(amended). The method of Claim [3 further comprising prior to said exposing contacting said surface with a pretreatment comprising at least one member selected from the group consisting of acid and basic cleaners] 9 wherein the surface comprises die cast zinc.

17(amended). The method of Claim 1 wherein said medium further comprises at least one [dopant] reducing agent selected from the group consisting of sodium borohydride and hypophosphide.

18(amended). The method of Claim [3] 1 further comprising applying at least one coating selected [wherein said adherent composition comprises at least one member chosen] from the group consisting of latex, silanes, epoxies, silicone, amines, alkyds, urethanes, polyester and acrylics.

19. [An article comprising an electrically conductive substrate comprising zinc wherein at least a portion of which has an inorganic and chromate free surface and at least one composition adhered to said article and wherein said has an ASTM B117 exposure to white rust of greater than 72 hours] The method of Claim 1 wherein said at least one silicate comprises at least one alkali silicate having an alkali to silica ratio of about 1:3.

Please replace the first paragraph on Page 1 of the specification with the following:

This application is a continuation of Application No. 10/211,051, filed August 02, 2002, which claims the benefit of U.S. Provisional Application No. 60/381,024, filed May 15, 2002 and Provisional Application No. 60/310,007, filed August 03, 2002. The disclosure of the foregoing Applications is hereby incorporated by reference.